

Corrected and Revised Enrollment Report Forecast: An Opportunity

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EPR 10 Year Enrollment Projection



FY18 EPR predicted:

- An increase of 374 new students in FY22 and 375 in FY27 (p24)
- A need for 15-30 New Classrooms by FY22 (p13)

The EPR was a Key Foundation of the Decision to Build a Ninth Elementary School

2017-2018 EPR Problems

- Contains inaccurate projection due to errors:
 - Double-accounting error of 40 Out of District (OOD) students added to each K class (pgs 23,24)
 - New Housing Development numbers in the EPR overstated
- Omits current data:
 - Two years of actual Brookline births not included which affects enrollment predictions FY23-FY28:
 - '16-'17 Actual of 579 vs. EPR estimate of 600
 - '17-'18 Actual of 548 vs. EPR projection of 615
 - Revised New Housing Development projects from Planning Department with new completion timing which generates fewer students

Problems Cause the EPR to Overstate the K-8 Student Population

Double Accounting Problem

“Progression rates from birth to K are comparison of *current Kindergarten enrollment* to births to mothers residing in the Town of Brookline.”

“Kindergarten projections include 40 students/year to reflect School Committee Policy regarding METCO/Material Fee student admission.”

Ten Year Enrollment Projections

Progression Rates: Progression rates from birth to K are comparison of current Kindergarten enrollment to births to mothers residing in the Town of Brookline. It is the net of new residents to the town, individuals moving out of town, children attending private school, and children with a delayed entry into Kindergarten. Progression Rates for all other grades, is the comparison of the grade enrollment with the corresponding cohort from the prior year; it is the net of the in and out migration and grade retention.

Ten-Year Enrollment Projection - No New Housing Developments

Grade	Progression Rate
K	0.94
1	1.01
2	0.98
3	1.01
4	0.98
5	0.99
6	0.98
7	0.98
8	0.98
9	1.00
10	1.02
11	0.98
12	1.01

Progression rates based on five year average

Ten Year Enrollment Projection

Kindergarten enrollment for FY19 through FY23 based on actual births. Kindergarten enrollment for FY24 through FY28 based on 615 projected births which is the projected average over the last three years.

Grade (A)	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
K	609	704	649	631	620	604	619	619	619	619	619
1	568	616	712	656	638	627	611	626	626	626	626
2	630	557	604	698	643	626	615	599	614	614	614
3	691	637	563	611	705	650	633	622	605	621	621
4	621	678	625	552	599	691	637	621	610	593	609
5	660	615	672	619	547	594	685	631	615	604	588
6	585	647	603	659	607	637	583	672	619	603	592
7	550	574	635	591	646	595	627	572	659	607	591
8	568	539	563	623	580	634	584	517	561	646	595
Subtotal	6,482	5,987	6,828	6,840	6,686	6,668	6,484	6,478	6,628	6,633	6,466
9	531	568	539	563	623	580	634	594	517	561	646
10	510	542	580	550	575	636	592	647	596	528	573
11	497	500	532	559	539	564	624	581	635	585	518
12	506	502	505	538	575	545	570	631	587	642	591
Subtotal	2,044	2,112	2,168	2,220	2,312	2,326	2,420	2,443	2,336	2,318	2,328
TOTAL	7,526	7,878	7,782	7,880	7,887	7,883	7,814	7,922	7,883	7,849	7,783

(A) Based on September 30, 2017 enrollment figures.

Preliminary Projected Enrollments EXCLUDING new housing developments.
Kindergarten projections include 40 students/year to reflect School Committee Policy regarding METCO/Material Fee student admission.

Progression Rate from Birth to K already Includes OOD Kindergarten Students in “Current Enrollment”
Inclusion of an Additional 40 Students per Year Double Counts K Enrollment from FY19 Onwards

Example: Impact of Double Accounting OOD Students

Enrollment Reporting with FY19 Actuals and 40 OOD Students Added											
Grade	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
K	603	603	649	631	620	604	619	619	619	619	619
1	568	615	610	656	638	627	611	626	626	626	626
2	630	574	603	598	643	626	615	599	614	614	614
3	631	645	580	610	604	650	633	622	605	621	621
4	621	600	633	569	598	592	637	621	610	593	609
5	660	605	674	627	564	593	587	631	615	604	588
6	585	665	593	661	615	553	582	576	619	603	592
7	550	571	652	582	648	603	542	571	565	607	591
8	568	545	560	639	571	636	591	532	560	554	595
Total	5,482	5,503	5,554	5,573	5,501	5,484	5,417	5,397	5,433	5,441	5,455
New Students	(18)	3	54	73	1	(16)	(83)	(103)	(67)	(59)	(45)

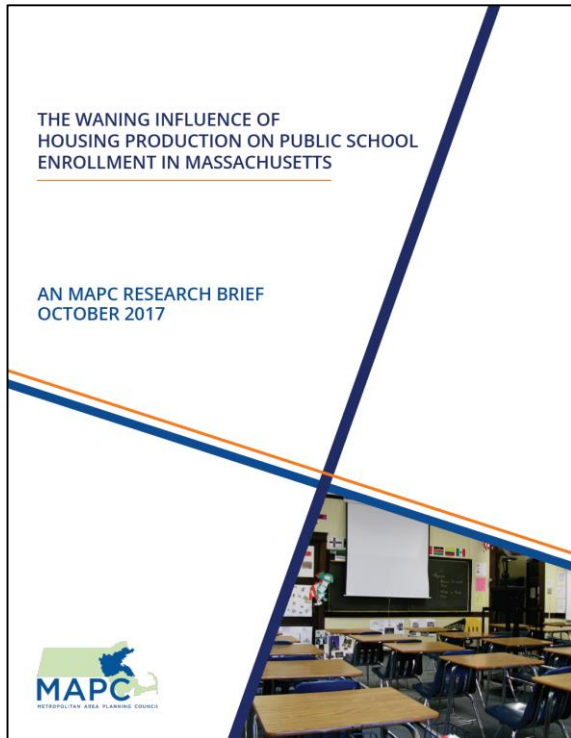
Table Above – Table Below

Enrollment Reporting with FY19 Actuals and 40 OOD Students Corrected											
Grade	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
K	603	603	609	591	580	564	579	579	579	579	579
1	568	615	610	616	597	586	570	585	585	585	585
2	630	574	603	598	604	586	575	559	574	574	574
3	631	645	580	610	604	611	592	581	565	580	580
4	621	600	633	569	598	592	599	581	570	554	569
5	660	605	674	627	564	593	587	594	576	565	549
6	585	665	593	661	615	553	582	576	583	565	554
7	550	571	652	582	648	603	542	571	565	572	554
8	568	545	560	639	571	636	591	532	560	554	561
Total	5,482	5,503	5,514	5,493	5,381	5,324	5,217	5,158	5,157	5,128	5,105
New Students	(18)	3	14	(7)	(119)	(176)	(283)	(342)	(343)	(372)	(395)

Enrollment Reporting with FY19 Actuals and 40 OOD Students Corrected											
Grade	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
K	0	0	40	40	40	40	40	40	40	40	40
1	0	0	0	41	41	41	41	41	41	41	41
2	0	0	0	0	41	41	41	41	41	41	41
3	0	0	0	0	0	42	42	42	42	42	42
4	0	0	0	0	0	0	42	42	42	42	42
5	0	0	0	0	0	0	0	42	42	42	42
6	0	0	0	0	0	0	0	0	42	42	42
7	0	0	0	0	0	0	0	0	0	42	42
8	0	0	0	0	0	0	0	0	0	0	42
Total	-	-	40	81	122	164	206	248	290	332	374

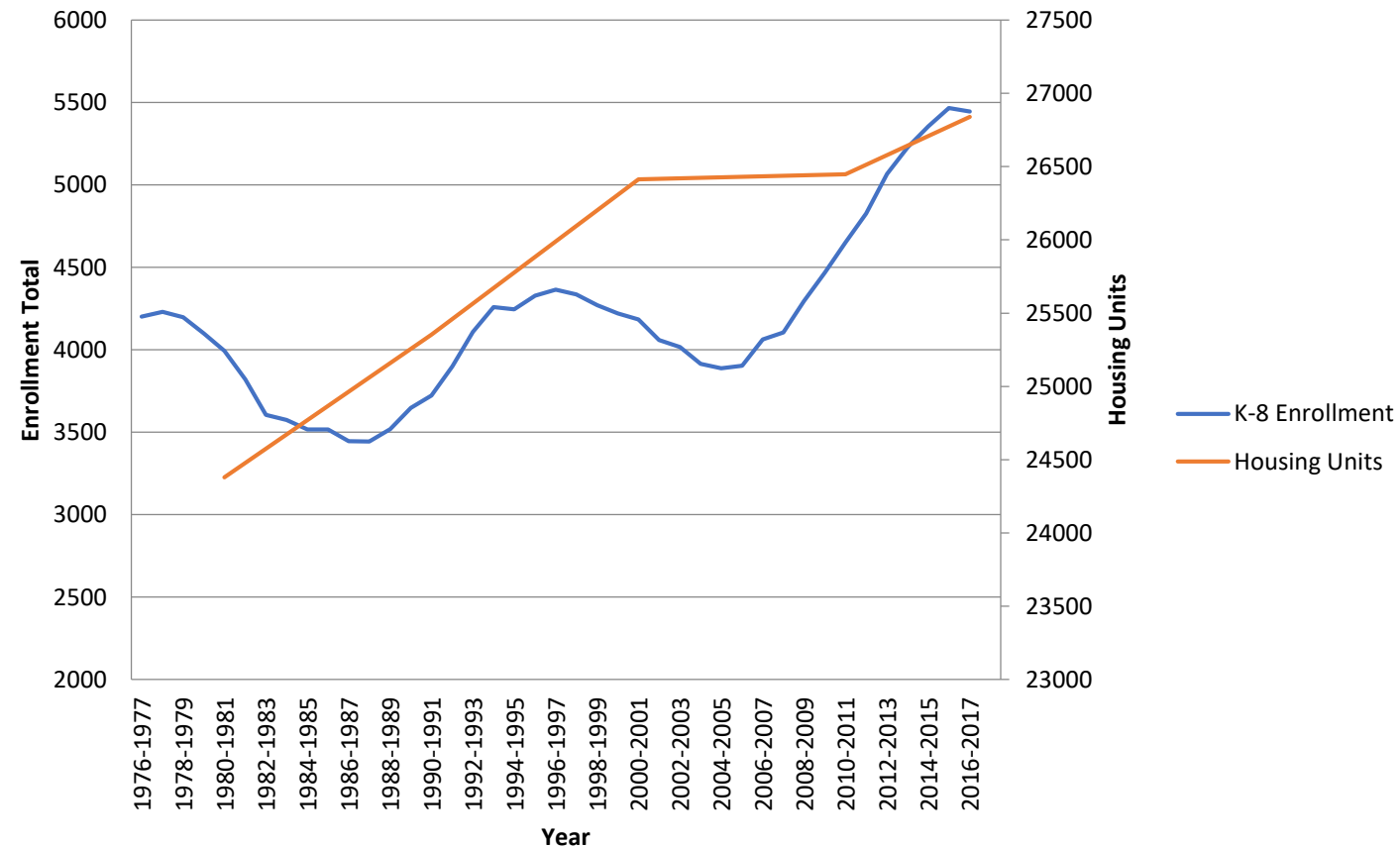
Double Accounting Error in Kindergarten has Escalating Impact

MAPC Research



<https://www.mapc.org/planning101/housing-production-and-school-enrollment-not-as-simple-as-the-birds-and-the-bees/>

School Enrollment and Residential Development in Brookline 1976-2017



MAPC: “No Meaningful Correlation Between Housing Production Rates and Enrollment Growth over a Six-year Period”
EPR: “Available historical data between Town-wide school enrollment and Town-wide housing growth does not suggest a correlation between the two factors.” (p28)

EPR New Housing Development Projection (p27)

Project	Total # Units	Studio	1-Bed	2-Bed	3-Bed	4-Bed	Projected Students K through 12	District	Year Complete	School Year Impacted
Student Generation Ratio			8.37%	49.31%	85.14%	160.61%				
40 Centre St	40	16	14	5	5				08/17/2019	2019-2020
Projected Students			1	2	4		7	Devotion		
420 Harvard	25	3	6	11	5				07/18/2019	2019-2020
Projected Students			1	5	4		10	Devotion		
Waldo/Durgin	299	7	158	104	30				04/13/2021	2021-2022
Projected Students			13	51	26		90	Devotion		
455 Harvard	17		10	5	2				07/22/2019	2019-2020
Projected Students			1	2	2		5	Devotion		
134 Babcock	52	22	19	5	6				10/12/2019	2019-2020
Projected Students			2	2	5		9	Devotion		
1200 Beacon (Holiday Inn)*	142	14	78	50					04/13/2021	2021-2022
Projected Students			7	25			32	Lawrence		
21 Crowninshield	8				8				06/30/2019	2019-2020
Projected Students					7		7	Devotion		
Hancock Village - ROSB	161		57	59	22	23			02/18/2020	2020-2021
Projected Students			5	29	19	37	90	Baker		
Hancock Village - Puddingstone	230		65	133	20	12			02/06/2021	2021-2022
Projected Students			5	66	17	19	107	Baker		
TOTALS	974	62	407	372	98	35				
Projected Students			35	182	84	56	357			

NHD Worksheet Projects Total of 357 Students (K-12) or about 247 K-8 Students FY20-FY22

EPR: New Housing Development Students

Ten Year Enrollment Projection with Housing (p24)

Grade (A)	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
K	609	704	653	644	656	640	655	655	666	677	716
1	568	616	714	665	664	663	647	662	662	673	684
2	630	557	607	708	672	651	650	635	649	649	660
3	691	637	566	621	733	679	658	657	642	656	656
4	621	678	629	565	635	719	666	645	644	630	643
5	660	615	675	631	580	629	712	660	639	638	624
6	585	647	606	669	636	569	617	698	647	627	626
7	550	574	638	601	673	624	558	605	685	635	615
8	568	539	566	633	607	660	612	547	593	672	623
Subtotal	5,482	5,567	5,654	5,737	5,856	5,834	5,775	5,764	5,827	5,857	5,847

minus

Ten Year Enrollment Projection without Housing (p23)

Grade (A)	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
K	609	704	649	631	620	604	619	619	619	619	619
1	568	616	712	656	638	627	611	626	626	626	626
2	630	557	604	698	643	626	615	599	614	614	614
3	691	637	563	611	705	650	633	622	605	621	621
4	621	678	625	552	599	691	637	621	610	593	609
5	660	615	672	619	547	594	685	631	615	604	588
6	585	647	603	659	607	537	583	672	619	603	592
7	550	574	635	591	646	595	527	572	659	607	591
8	568	539	563	623	580	634	584	517	561	646	595
Subtotal	5,482	5,567	5,626	5,640	5,585	5,558	5,494	5,479	5,528	5,533	5,455

Projected Student Generated By New Housing Developments											
Grade	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
K	0	0	4	13	36	36	36	36	47	58	97
1	0	0	2	9	26	36	36	36	36	47	58
2	0	0	3	10	29	25	35	36	35	35	46
3	0	0	3	10	28	29	25	35	37	35	35
4	0	0	4	13	36	28	29	24	34	37	34
5	0	0	3	12	33	35	27	29	24	34	36
6	0	0	3	10	29	32	34	26	28	24	34
7	0	0	3	10	27	29	31	33	26	28	24
8	0	0	3	10	27	26	28	30	32	26	28
Total	-	-	28	97	271	276	281	285	299	324	392

It is Unclear How these EPR Numbers (which differ from the worksheet numbers) were Generated

Revised New Housing Development

Note: these represent Planning Department's
"earliest possible" completion dates

	Project Name	Elevator	stu	1BR	2BR	3BR	4BR	Units	Source	Notes	Studio	1 Bed	2 Bed	3 Bed	4 Bed	Projected K-12 Students	K-8 69%	Est. Occ.	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024		Total
								- Studio			-	0.08	0.49	0.85	1.61											
South	ROSB Modified			57	59	22	23	161	Planning Dept		0	5	29	19	37	90	62	2022	0	0	0	62	0	0		62
	Puddingstone			54	140	24	12	230	Planning Dept		0	5	69	20	19	113	78	2022	0	0	0	78	0	0		78
	Eleven80/1180 Boylston			21	24			45	Planning Dept	55+ Housing*	0	2	12	0	0	14	3	2022	0	0	0	3	0	0		3
North	1299 Beacon	Yes		32	42			74	Planning Dept		0	3	21	0	0	24	17	2022	0	0	0	17	0	0		17
	Hampton Court/1223 Beacon	Yes	8	38	52	25		115	Planning Dept		0	3	26	21	0	50	35	2024	0	0	0	0	0	35		35
	JFK Place/445 Harvard			12	10	3		25	Planning Dept		0	1	5	3	0	9	6	2023	0	0	0	0	6	0		6
	500 Harvard St		3	17	7	3		27	Planning Dept		0	1	3	3	0	7	5	2023	0	0	0	0	5	0		5
	384 Harvard St			52	10	0		62	Planning Dept	55+ Housing*	0	4	5	0	0	9	2	2021	0	0	2	0	0	0		2
	Babcock Place/134-138 Babcock		22	20	13	7	5	45	Planning dept		0	2	6	6	8	22	15	2021	0	0	15	0	0	0		15
	The Coolidge/8-10 Waldo	Yes		85	58			143	Planning Dept		0	7	29	0	0	36	25	2022	0	0	0	25	0	0		25
	21 Crowninshield					8		8	Planning Dept		0	0	0	7	0	7	5	2020	0	5	0	0	0	0		5
	455 Harvard St			10	5	2		17	Planning Dept		0	1	2	2	0	5	3	2020	0	3	0	0	0	0		3
	40 Centre St		16	14	5	5		24	Planning Dept		0	1	2	4	0	7	5	2022	0	0	0	5	0	0		5
	JFK Crossing/420 Harvard		3	6	11	5		22	Planning Dept		0	1	5	4	0	10	7	2020	0	7	0	0	0	0		7
Total											0	36	214	89	64	403	268		0	15	17	190	11	35	So Bro	143
																			0%	6%	6%	71%	4%	13%	No Bro	125
																									Total	268

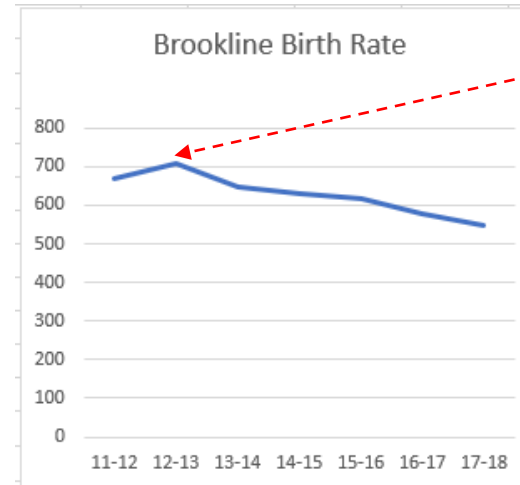
* 55+ Housing, few children adjusted to 33% of usual projection

Source: Planning Dept; EPR Student Generation Rates

Revised NHD Projections: 268 Student Influx from FY19 - FY24 Using EPR Student Generation Rates
(and only if **all** of these projects are actually are built and occupied within that time-frame)

Additional Birth Rate Data

Brookline Birth rate			
Year	EPR P35	State	Δ
11-12	665	667	2
12-13	706	706	0
13-14	647	649	2
14-15	628	632	4
15-16	616	615	-1
16-17	600	579	-21
17-18	615	548	-67
18-19	615	581	-34
19-20	615	581	-34
3 yr average			



- This Fall's K class of 603 students comes from the peak birth rate 12-13 shown here
- Brookline births declined by 22% since 2012
- For the next five years (at least) the trend is down

Source: EPR 2017-18; MA Registry of Vital Records and Statistics

Declining Birth Rate will Likely Lead to Declining K Enrollment

Original EPR Projections Compared to Corrected and Revised EPR Projections

Original EPR

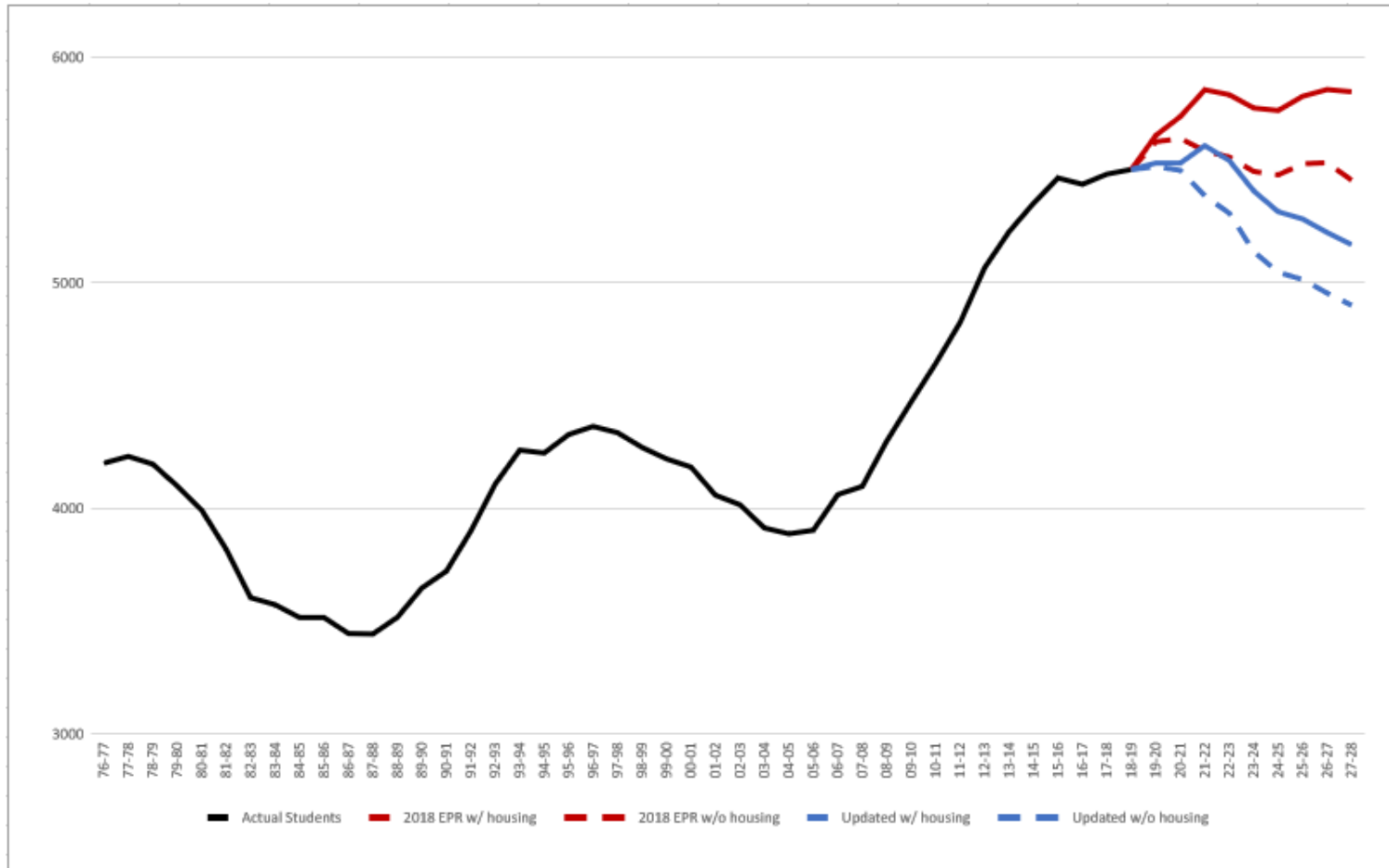
EPR P24 with New Housing Assumption											
Grade	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
K	609	704	653	644	656	640	655	655	666	677	716
1	568	616	714	665	664	663	647	662	662	673	684
2	630	557	607	708	672	651	650	635	649	649	660
3	691	637	566	621	733	679	658	657	642	656	656
4	621	678	629	565	635	719	666	645	644	630	643
5	660	615	675	631	580	629	712	660	639	638	624
6	585	647	606	669	636	569	617	698	647	627	626
7	550	574	638	601	673	624	558	605	685	635	615
8	568	539	566	633	607	660	612	547	593	672	623
Total	5,482	5,567	5,654	5,737	5,856	5,834	5,775	5,764	5,827	5,857	5,847
New Students	(21)	64	151	234	353	331	272	261	324	354	344
Classrooms Req.		3	7	11	17	16	13	12	15	17	16

Corrected and Revised EPR

Enrollment Report, Corrected for Double Counting error and New Housing Development and Updated Birth Data											
Grade	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
K	609	603	611	595	579	545	516	547	547	547	547
1	568	615	610	618	601	585	551	522	553	553	553
2	630	574	603	598	606	589	574	540	512	542	542
3	691	645	580	610	604	613	595	580	546	518	548
4	621	680	633	569	598	592	601	584	569	536	508
5	660	605	674	627	564	593	587	595	579	564	531
6	585	665	593	661	615	553	582	576	584	568	553
7	550	571	652	582	648	603	542	571	565	573	557
8	568	545	560	639	571	636	591	532	560	554	562
Addnl Housing	0	0	15	32	222	233	268	268	268	268	268
Total	5,482	5,503	5,531	5,531	5,608	5,542	5,407	5,315	5,283	5,223	5,169
New Students	(21)	0	28	28	105	39	(96)	(188)	(220)	(280)	(334)
Classrooms Req		0	1	1	5	2	-5	-9	-10	-13	-16

Revised Peak Students in FY22: 105 Compared to 353 in Original EPR
and from FY24-28 **Fewer** Students than Presently Enrolled

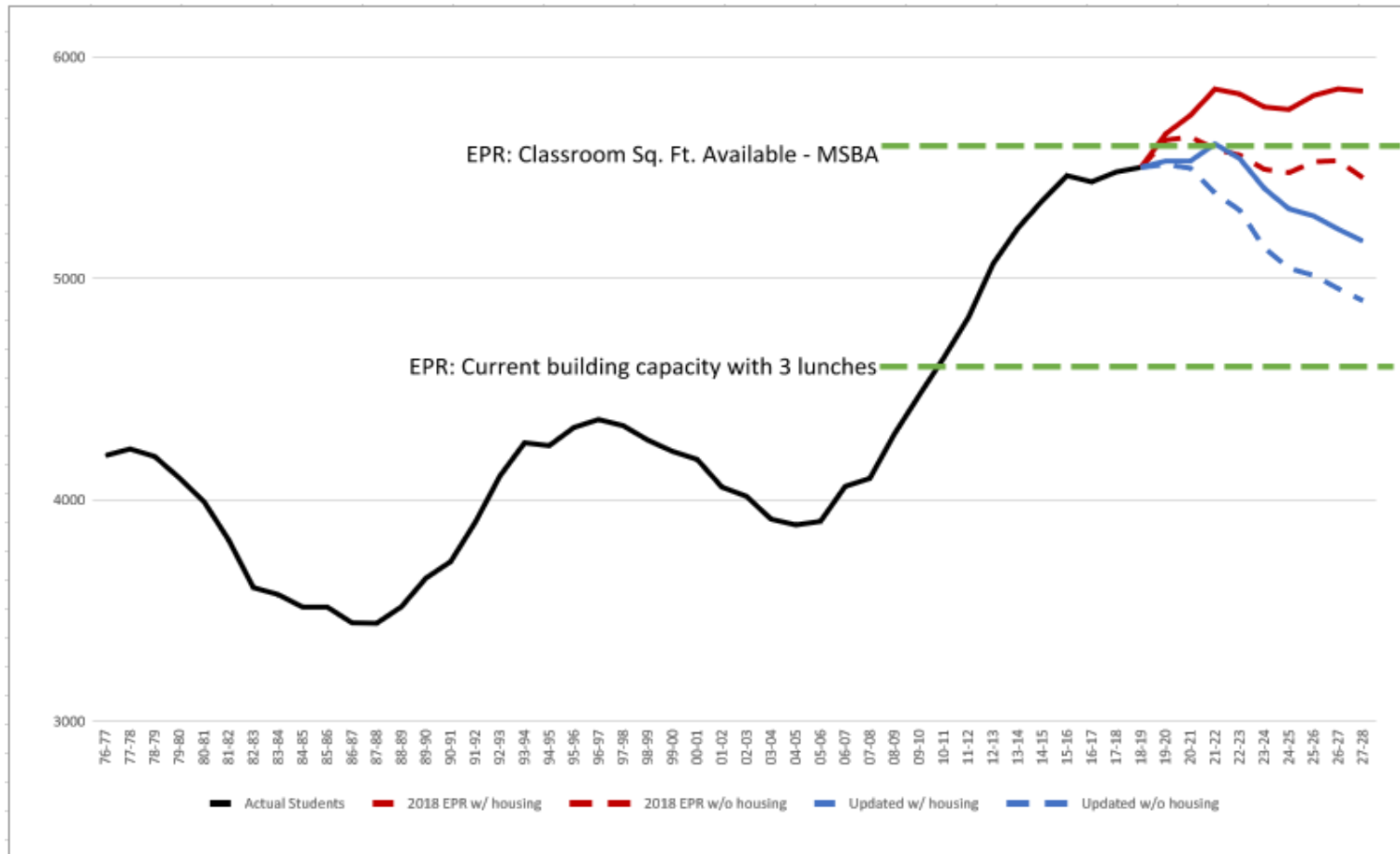
Student Enrollment and Projections 1976 - 2028



Original EPR Prediction (Red) Compared to Revised and Corrected EPR (Blue)

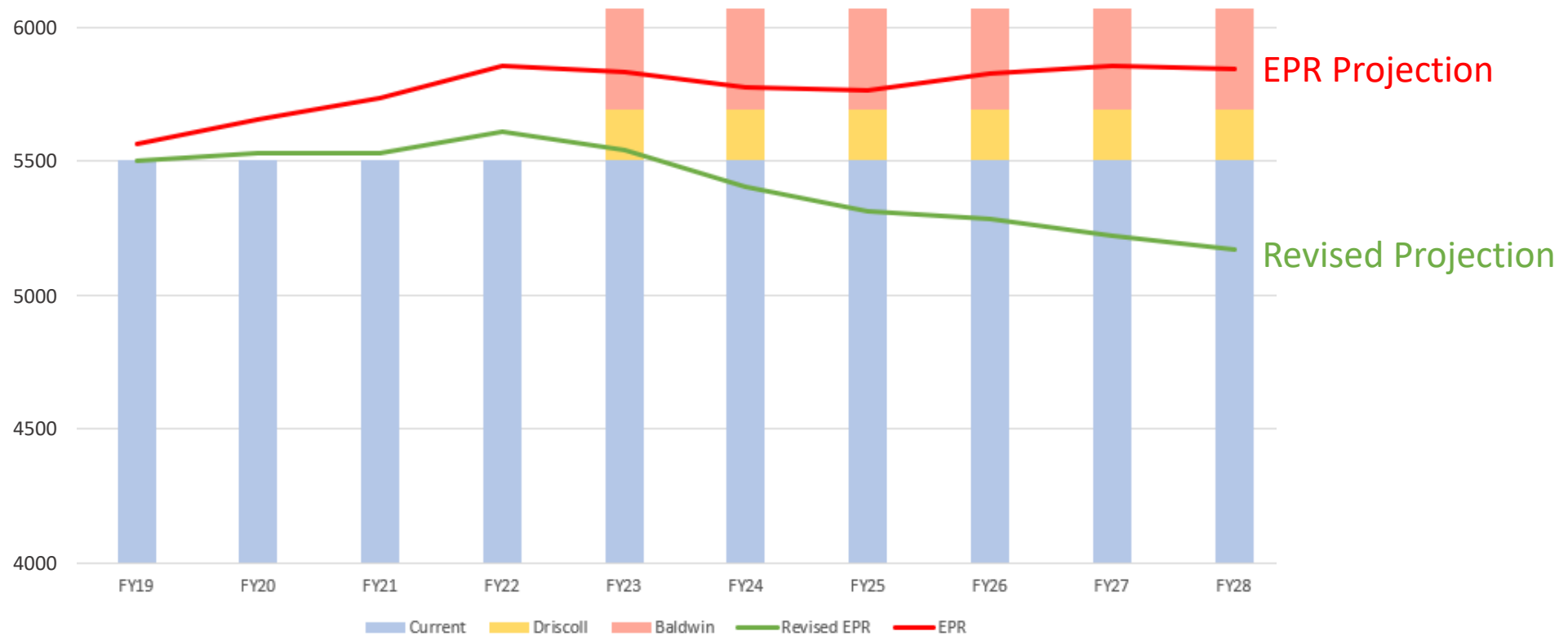
Dashed Lines show Projections without Housing, Solid lines with Housing

Student Enrollment and Projections 1976-2028



Revised EPR Prediction Shows Overcrowding of Core Facilities will Continue
but, using MSBA Standards, Student Capacity will Not Grow to Exceed Classroom Capacity FY22 – FY28
Note: Green lines indicating classroom and cafeteria capacities directly from EPR

Projected K – 8 Student Enrollment FY19 – FY28



Currently Planned Increase of Capacity (Pink and Yellow)
Exceeds K-8 Revised Student Projection (Green) in FY24 - FY28

NHD Impact using Localized Student Generation Rates

	Project Name	Elevator	stu	1BR	2BR	3BR	4BR	Units	Source	Notes	Studio	1 Bed	2 Bed	3 Bed	4 Bed	Projected	K-8	Est.	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024		Total
											-	0.35	0.25	0.76	1.61	K-12	69%	Occ.								
								- Studio				0.12	0.91	1.71	1.61	Students										
South	ROSB Modified			57	59	22	23	161	Planning Dept		0	7	54	38	37	136	94	2022	0	0	0	94	0	0		94
	Puddingstone			54	140	24	12	230	Planning Dept		0	6	127	41	19	193	134	2022	0	0	0	134	0	0		134
	Eleven80/1180 Boylston			21	24			45	Planning Dept	55+ Housing*	0	3	22	0	0	25	6	2022	0	0	0	6	0	0		6
North	1299 Beacon	Yes		32	42			74	Planning Dept		0	11	11	0	0	22	15	2022	0	0	0	15	0	0		15
	Hampton Court/1223 Beacon	Yes	8	38	52	25		115	Planning Dept		0	13	13	19	0	45	31	2024	0	0	0	0	0	31		31
	JFK Place/445 Harvard			12	10	3		25	Planning Dept		0	4	3	2	0	9	6	2023	0	0	0	0	6	0		6
	500 Harvard St		3	17	7	3		27	Planning Dept		0	6	2	2	0	10	7	2023	0	0	0	0	7	0		7
	384 Harvard St			52	10	0		62	Planning Dept	55+ Housing*	0	18	3	0	0	21	5	2021	0	0	0	5	0	0		5
	Babcock Place/134-138 Babcock		22	20	13	7	5	45	Planning dept		0	7	3	5	8	23	16	2021	0	0	16	0	0	0		16
	The Coolidge/8-10 Waldo	Yes		85	58			143	Planning Dept		0	30	15	0	0	45	31	2022	0	0	0	31	0	0		31
	21 Crowninshield					8		8	Planning Dept		0	0	0	6	0	6	4	2020	0	4	0	0	0	0		4
	455 Harvard St			10	5	2		17	Planning Dept		0	4	1	2	0	7	5	2020	0	5	0	0	0	0		5
	40 Centre St		16	14	5	5		24	Planning Dept		0	5	1	4	0	10	7	2022	0	0	0	7	0	0		7
	JFK Crossing/420 Harvard		3	6	11	5		22	Planning Dept		0	2	3	4	0	9	6	2020	0	6	0	0	0	0		6
	Total										0	116	258	123	64	561	367		0	15	21	287	13	31	So Bro	234
																			0%	4%	6%	78%	4%	8%	No Bro	133
										* 55+ Housing, few children adjusted to 33% of usual projection															Total	367

Using Localized SGRs: 367 Students are Added, 234 from South Brookline and 133 from North Brookline

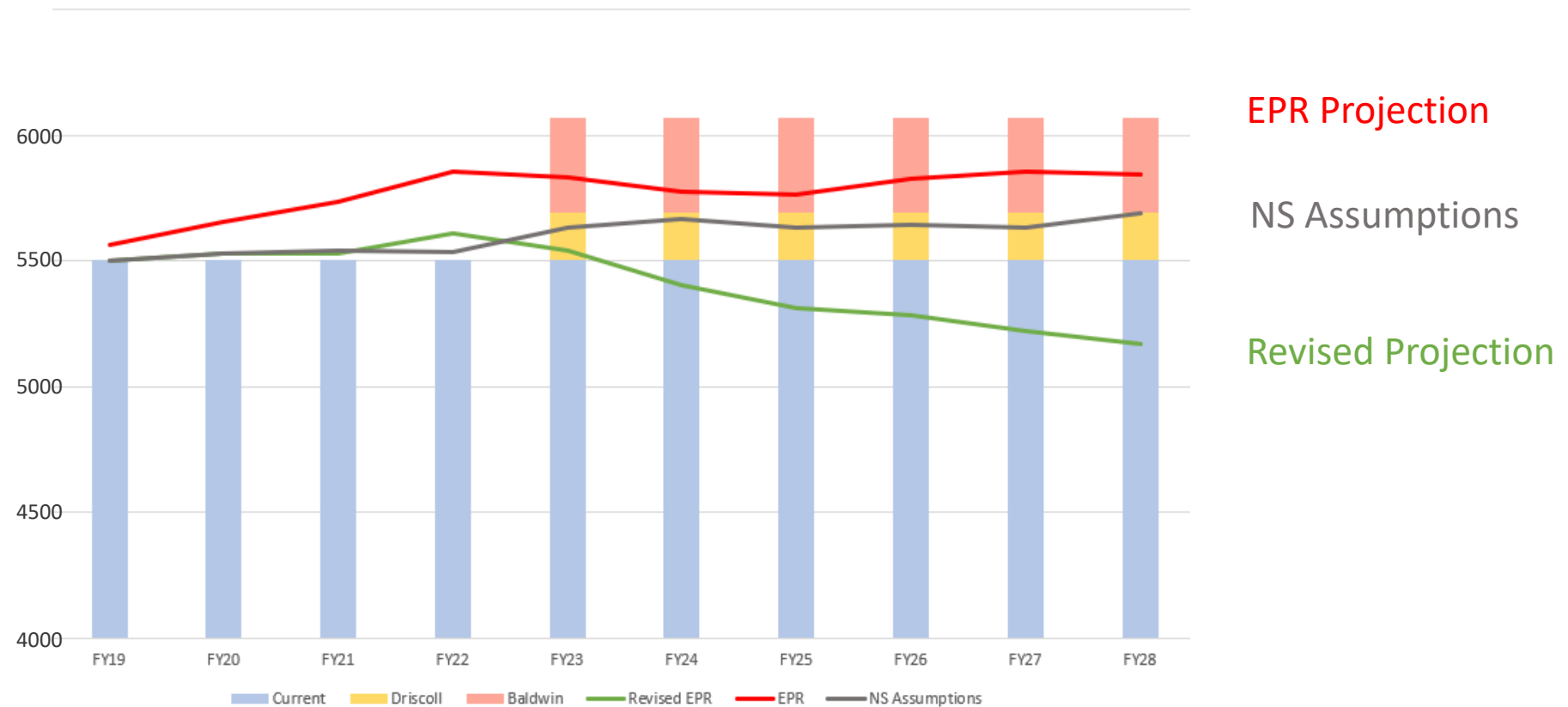
Projections Assuming Flat K Enrollment and Localized Student Generation Rates

Enrollment Report, Corrected for Double Counting error and Flat K at 600											
Grade	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
K	609	603	611	600	600	600	600	600	600	600	600
1	568	615	610	618	606	606	606	606	606	606	606
2	630	574	603	598	606	594	594	594	594	594	594
3	691	645	580	610	604	613	600	600	600	600	600
4	621	680	633	569	598	592	601	588	588	588	588
5	660	605	674	627	564	593	587	595	583	583	583
6	585	665	593	661	615	553	582	576	584	572	572
7	550	571	652	582	648	603	542	571	565	573	561
8	568	545	560	639	571	636	591	532	560	554	562
Total	5,482	5,503	5,516	5,504	5,412	5,390	5,303	5,262	5,280	5,270	5,266
Increase from FY19 (students)	(21)	0	13	1	(91)	(113)	(200)	(241)	(223)	(233)	(237)
Increase from FY19 (classrooms)		0	1	0	-4	-5	-10	-11	-11	-11	-11

Enrollment Report, Corrected for Double Counting and AND Housing including HV SGRs											
	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Students from Add'l Housing	0	0	14	35	123	243	363	363	363	363	363
Total	5,482	5,503	5,530	5,539	5,535	5,633	5,666	5,625	5,643	5,633	5,629
Increase from FY19 (students)	(21)	0	27	36	32	130	163	122	140	130	126
Increase from FY19 (classrooms)		0	1	2	2	6	8	6	7	6	6
Increase from EPR proj (students)	-	(64)	(124)	(198)	(321)	(201)	(109)	(139)	(184)	(224)	(218)
Increase from EPR proj (classrooms)		(3)	(6)	(9)	(15)	(10)	(5)	(7)	(9)	(11)	(10)

With These Assumptions, Projections Suggest One Section is Required starting FY23
Which will Be Satisfied by New Driscoll

Projected K – 8 Student Enrollment FY19 – FY28



Comparison of Original EPR, Revised Projection and Projections with the NS Assumptions

Proposal for Consideration

- **Build** new school at Driscoll and add 9 classrooms for additional capacity
- **Renovate** Pierce with MSBA assistance
- **Delay** funding Baldwin for one year to:
 - Enable the downward trend of birth rate and K enrollment to be confirmed
 - Enable New Housing Development projections with greater clarity
 - Develop feasibility plans for reducing overcrowding directly, through targeted, point-solutions, e.g.:
 - Enlarge Lawrence Cafeteria and Kitchen (maybe add extra rooms for library and music/arts, etc.)
 - Enlarge Baker Cafeteria and Gymnasium
 - Improve Heath walk-through classroom
 - Improve Lincoln staff office space
 - Provide a More Cost Effective, Less Disruptive and Greener Solution
- **Decide:**
 - If, downward trends are confirmed, then implement overcrowding point solutions
 - If, demographic trends are up, then implement Baldwin capacity plan

Wait and Do, Not Wait and See